

REMARKS

Favorable reconsideration of this application as presently amended is respectfully requested. Claims 57-65 are pending.

A. Response to Rejection of claims 57-58, 61 and 64-65 under 35 U.S.C. § 103(a) as being unpatentable over Jewell in view of Choquette.

1. This rejection is *prima facie* improper, because the rejection provides no appropriate basis for combining Choquette with Jewell.

At pages 2-3 of the Office Action, claims 57-58, 61, and 64-65 are rejected under 35 U.S.C. § 103(a) as being as being unpatentable based on U.S. Patent No. 5,245,622 to Jewell *et al.* (Jewell) in view of U.S. Patent No. Choquette *et al.* (Choquette). This rejection is respectfully traversed with respect to the claims as currently presented.

This rejection is *prima facie* improper because it provides no appropriate basis for combining Choquette with Jewell. As set forth in the Manual of Patent Examining Procedure (MPEP) at § 706.02(j), “To establish a *prima facie* case of obviousness . . . there must be some suggestion or motivation, *either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings* (emphasis added) . . . The teaching or suggestion to make the claimed combination and the reasonable expectation of success *must both be found in the prior art and not based on applicant’s disclosure* (emphasis added). *In re Vaeck*, 947 F.2d. 488, 20 USPQ2d 1438 (Fed. Cir. 1991).”

The Office Action attempts to justify combining Choquette with Jewell based on the following conclusory statement:

It would have been obvious to one of ordinary skill in the art at the time the invention was made to replace the implanted proton layer #48 of Jewell with the oxidized AlGaAs layer of Choquette to provide current confinement and direction through the remaining aperture in the oxide, into the active region, resulting in increased light generation efficiency (Choquette, col. 10, lines 15-25) (See Office Action, p. 3).

However, the Office Action has identified no portion of Jewell, Choquette or any other reference that would properly provide a person of ordinary skill in the art reading Jewell to be motivated to combine Choquette with Jewell. As stated by the Federal Circuit in *Sibia Neurosciences Inc. v. Cadus Pharmaceutical Corp.*, 55 USPQ2d 1927, 1931 (Fed. Cir. 2000), “[d]etermining whether there is a suggestion or motivation to modify a prior art reference is one aspect of determining the scope and content of the prior art, a fact question subsidiary to the ultimate conclusion of obviousness.” (citing *Tec Air, Inc. v. Denso Mfg.*, 52 USPQ2d 1296, 1297-98 (Fed. Cir. 1999) (stating that the factual underpinnings of obviousness include whether a reference provides a motivation to combine its teachings with another)). Furthermore, as noted by the Federal Circuit in *In re Lee*, 61 USPQ2d 1430, 1433 (Fed. Cir. 2002), specific reasons must be shown in the art suggesting a combination of references. (See also *In re Kotzab*, 217 F.3d 1365, 1371, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000) (“[P]articular findings must be made as to the reason the skilled artisan, with no knowledge of the claimed invention, would have selected these components for combination in the manner claimed.”); *In re Rouffet*, 149 F.3d 1350, 1359, 47 USPQ2d 1453, 1459 (Fed. Cir. 1998) (“[E]ven when the level of skill in the art is high, the Board must identify specifically the principle, known to one of ordinary skill, that suggests the claimed combination.”)).

2. No proper motivation provided in Office Action for combining Choquette with Jewell.

As admitted by the Office Action, Jewell, uses a current aperture defined by a proton implanted region (see Jewell, col. 6, lines 38-39) and does not teach or suggest the use of an oxidizable region or an oxide. In contrast, Choquette uses an aperture defined by an oxide and say nothing with respect to how an aperture defined by an oxide can be used to replace an aperture defined by a proton implanted region. Because Jewell does not teach or suggest an aperture in an oxide, a person of ordinary skill in the art reading Jewell would have no motivation to look to Choquette to provide “current confinement and direction, through [an] aperture in [an] *oxide*, into the active region” (emphasis added). In fact, because Choquette uses an oxide and Jewell does not, Choquette actually teaches

away from Jewell. For at least the above reasons, the Office Action's combination of Coquette with Jewell is *prima facie* improper.

3. No proper motivation provided in Office Action for making the modification of Jewell that is described in the Office Action.

The Office Action describes modifying Jewell by replacing Jewell's implanted proton layer #48 with the oxidized AlGaAs layer of Choquette. The Office Action has cited no portion of Choquette that teaches or suggests replacing an implanted proton layer, such as the implanted proton layer #48 of Jewell, with the oxidized AlGaAs layer of Choquette. The Office Action presupposes the modification, and then attempts to justify the combination. Therefore, the Office Action's modification of Jewell by Coquette is based on improper hindsight for this reason as well.

4. The rejection based on Jewell in view of Choquette is *prima facie* improper because the rejection is based on improper hindsight.

The basis for combining Choquette with Jewell set forth in the Office Action presupposes the combination of Choquette with Jewell and then provides a hindsight justification for this combination. There is no suggestion in Jewell and Choquette for combining the structures of these references. But for reading Applicant's application, a person of ordinary skill in the art have no reason to combine Choquette, which uses an aperture in an oxide (see Office Action, p. 3), and does not say anything about apertures defined by a proton implanted region, with Jewell, which uses a current aperture defined by a proton implanted region (see Jewell, col. 6, lines 38-39) and does not employ an oxide. The Federal Circuit has stated in *Cardiac Pacemakers Inc. v. St Jude Medical Inc.* 72 USQP2d 1333, 1336 (Fed. Cir 2004) that "Prior knowledge in the field of the invention must be supported by tangible teachings of reference materials, and the suggestion to combine references must not be derived by hindsight from knowledge of the invention itself. See also *Gambro Lundia AB v. Baxter Healthcare Corp.*, 110 F.3d 1573, 1578-79 [42 USPQ2d 1378] (Fed. Cir. 1997) ("However, the record must provide a teaching, suggestion, or reason to substitute computer-controlled valves for the system of hoses in

the prior art. The absence of such a suggestion to combine is dispositive in an obviousness determination.”)’ For the above reasons the rejections of claims 57-58, 61 and 64-65 based on Jewell in view of Choquette is *prima facie* improper, because the rejection is based on improper hindsight.

5. The Office Action makes an assertion about the results of a hypothetical modification of Jewell that is unsupported by any evidence.

The Office Action asserts that replacing “the implanted proton layer #48 of Jewell with the oxidized AlGaAs layer of Choquette” would result “in increased light generation efficiency” (see Office Action, p. 3). However, the Office Action has provided no evidence supporting the above unsupported assertion. Because the Office Action uses this unsupported assertion as part of the basis for combining Choquette with Jewell, the rejection of Jewell in view of Choquette is *prima facie* improper for this additional reason.

6. The combination of Choquette and Jewell does not teach or suggest every feature of claims 57-58, 61, and 64-65.

The rejection of claim 57 based on the combination of Choquette with Jewell in view is *prima facie* improper for additional reasons. Claim 57 claims “interconnect metallization deposited above at least a portion of [a] semiconductor layer and in contact with [a] top electrical contact.” As set forth in MPEP § 706.02(j), “To establish a *prima facie* case of obviousness . . . The prior art reference (or references) when combined must teach or suggest *all of the claim limitations* (emphasis added). However, despite what is asserted at page 2 of the Office Action, Jewell does not even teach or suggest interconnect metallization, much less interconnect metallization that is in contact with a top electrical contact as claimed by claim 57. The cited portion of Jewell (col. 6, lines 30-32) merely describes a contact 80 that is formed by photolithography and metallic deposition. The Office Action also cites no portion of Choquette that teaches or suggest interconnect metallization. Therefore, Jewell and Choquette, either alone or in combination do not teach or suggest every feature of claim 57.

In addition, because claims 58, 61, and 64-65 depend from claim 57, either directly or indirectly, claims 58, 61, and 64-65 include all of the features of claim 57, as well as additional features. Therefore, the combination of Choquette and Jewell cannot teach nor suggest every feature of claims 58, 61, and 64-65.

Therefore, because the combination of Choquette and Jewell fails to teach or suggest every feature of claims 57-58, 61, and 64-65, the rejection of claims 57-58, 61, and 64-65 based on Jewell in view of Choquette is *prima facie* improper for this additional reason.

7. The rejection of claims 57-58, 61, and 64-65 based on Jewell in view of Choquette, should be withdrawn.

In summary, for at least the reasons discussed above, the rejection of claims 57-58, 61 and 64-65 based on Jewell in view of Choquette is *prima facie* improper should be withdrawn.

B. Response to Rejection of Claims 59-60 and 62-63 under 35 U.S.C. § 103(a) as being unpatentable based on Jewell in view of Choquette, and further in view of Evans.

1. The combination of Evans with Jewell and Choquette is *prima facie* improper, because the combination of Jewell and Choquette is *prima facie* improper.

At page 3 of the Office Action, claims 59-60 and 62-63 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Jewell in view of Choquette, and further in view of Evans *et al.*, “Edge-Emitting Quantum Well Heterostructure Laser Diodes with Auxiliary Native-Oxide Vertical Cavity Confinement (Evans). This rejection is respectfully traversed.

Claims 59-60 and 62-63 ultimately depend from claim 57. For reasons discussed above, the rejection of claim 57 based on Jewell in view of Choquette is *prima facie*

improper. Therefore, for at least the same reasons, the rejection of claim 59-60 and 62-63 based on the combination of Evans with Choquette and Jewell is also *prima facie* improper.

2. No proper motivation provided in Office Action for combining Choquette with Jewell.

In addition, the Office Action has provided no proper motivation for combining Evans with the combination of Choquette and Jewell in rejecting claims 59-60 and 62-63. (See MPEP § 706.02(j), cited cases and relevant text discussed in Section A above regarding “motivation to combine references.”) In rejecting claims 59-60 and 62-63, the Office Action attempts to justify combining Evans with Choquette and Jewell based on the following conclusory statement which relies not on Evans, Jewell, and/or Choquette, but instead on the Applicants’ own disclosure:

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the light emitting device of Jewell and Choquette with the trench oxidation method, and location, of Evans to allow for fabrication flexibility, oxidation of selected layers for the current/index guiding, light confinement, and the realization of a passivated crystal surface which increases device reliability (Evans, col. 6, lines 15-21) (See Office Action, p. 4).

The above quoted conclusory statement fails to identify any text in Evans, Jewell, or Choquette, or any other reference, that would provide any motivation for combining Evans with the improper combination of Jewell and Choquette. (See MPEP § 706.02(j), cited cases and relevant text discussed in Section A above regarding “motivation to combine references.”). The Office Action fails to cite any language in Jewell or Choquette that would motivate a person of ordinary skill in the art to look at Evans. The Office Action has also failed to cite any language in Evans that would suggest to a person of ordinary skill in the art to look at Jewell or Choquette. As stated in the Office Action, Jewell and Choquette do not use the “trench oxidation method and location of Evans”, so a person of ordinary skill in the art reading Evans would have no reason to look at Jewell and/or Choquette which don’t use the oxidation method and location of Evans. In fact, because, as admitted in the Office Action (see Office Action, p. 3), Jewell does not use any oxidation, Evans

actually teaches away from Jewell. For at least the above reasons, the combination of Evans with Jewell and Choquette is *prima facie* improper.

3. The rejection based on the combination of Choquette and Jewell in view of Evans is *prima facie* improper because the rejection is based on improper hindsight.

The basis for combining Evans with the improper combination of Choquette with Jewell set forth in the Office Action presupposes the combination of Evans with Choquette and Jewell and then provides a hindsight justification for this combination. There is no suggestion in Evans, Choquette and Jewell for combining the structures of these references. But for reading Applicant's application, a person of ordinary skill in the art have no reason to combine Evans, which uses trench oxidation at a particular location (see Office Action, pp. 5-6) with Choquette which does not use trench oxidation (see Office Action, p. 5) or with Jewell which does not even employ an oxide (see Office Action, p. 3). The Federal Circuit has stated in *Cardiac Pacemakers Inc. v. St Jude Medical Inc.* 72 USQP2d 1333, 1336 (Fed. Cir 2004) that "Prior knowledge in the field of the invention must be supported by tangible teachings of reference materials, and the suggestion to combine references must not be derived by hindsight from knowledge of the invention itself. See also *Gambro Lundia AB v. Baxter Healthcare Corp.*, 110 F.3d 1573, 1578-79 [42 USPQ2d 1378] (Fed. Cir. 1997) ("However, the record must provide a teaching, suggestion, or reason to substitute computer-controlled valves for the system of hoses in the prior art. The absence of such a suggestion to combine is dispositive in an obviousness determination.")" For the above reasons the rejections of claims 59-60 and 62-63 based on Evans in view of the combination of Choquette with Jewell is *prima facie* improper, because the rejection is based on improper hindsight.

4. The Office Action makes an assertion about the results of a hypothetical modification of Jewell that is unsupported by any evidence.

The Office Action asserts that combining "the [hypothetical] light emitting device of Jewell and Choquette with the trench method, and location, of Evans [will provide]

fabrication flexibility, oxidation of selected layers for current/index guiding, light confinement, and the realization of a passivated crystal surface which increases device reliability (see Office Action, pp. 4-5). However, the Office Action has provided no evidence supporting the above unsupported assertions with respect to any particular device described in Jewell or Choquette, much less the *hypothetical* “light emitting device of Jewell and Choquette”. Because the Office Action uses this unsupported assertion as part of the basis for combining Evans with the improper combination of Choquette and Jewell, the rejection of Jewell in view of Choquette is *prima facie* improper for this additional reason.

5. The combination of Evans with Choquette and Jewell does not teach or suggest every feature of claims 59-60 and 62-63.

For the reasons discussed above, the rejection of claim 57 based on the combination of Choquette with Jewell is *prima facie* improper for failing to teach or suggest every feature claimed by claim 57. As noted above, the combination of Choquette and Jewell does not even teach or suggest interconnect metallization, much less interconnect metallization that is in contact with a top electrical contact as claimed by claim 57. The Office Action also cites no portion of Evans that teaches or suggest interconnect metallization. Therefore, Jewell and Choquette, either alone or in combination do not teach or suggest every feature of claim 57.

In addition, because claims 59-60 and 62-63 depend from claim 57, either directly or indirectly, claims 59-60 or 62-63 include all of the features of claim 57, as well as additional features. Therefore, the combination of Evans with Choquette and Jewell cannot teach nor suggest every feature of claims 59-60 and 62-63.

Therefore, because the combination of Evans with Choquette and Jewell fails to teach or suggest every feature of claims 59-60 and 62-63, the rejection of claims 59-60 and 62-63 based on Choquette and Jewell in view of Evans is *prima facie* improper for this additional reason.

6. The rejection of claims 59-60 and 62-63 based on the combination of Choquette and Jewell in view of Evans should be withdrawn.

In summary, for at least the reasons discussed above, the rejection of claims 59-60 and 62-63 based on the combination of Choquette and Jewell in view of Evans is *prima facie* improper should be withdrawn.

C. The rejection of claims 57-63 based on the judicially created doctrine of obvious-type double patenting is obviated by the attached Terminal Disclaimer.

At page 5 of the Office Action, claims 57-63 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 3, 5, and 8 of U.S. Patent No. 6,014,395.

Applicant has filed concurrently with this paper a terminal disclaimer disclaiming the terminal part of the statutory term of any patent granted on the captioned application, which would extend beyond the expiration date of the full statutory term of U.S. Patent No. 6,014,395. Applicant respectfully asserts that these rejections are obviated by the terminal disclaimer filed with this paper.

Applicant has submitted the terminal disclaimer solely to advance the prosecution of the application, without conceding that the double patenting rejection is properly based. In filing the terminal disclaimer, Applicant relies upon the rulings of the Federal Circuit that the filing of such a terminal disclaimer does not act as an admission, acquiescence or estoppel on the merits of the obviousness issue. See, e.g., *Quad Environmental Tech v. Union Sanitary Dist.*, 946 F.2d 870, 874-875 (Fed. Cir. 1991); *Ortho Pharmaceutical Corp. v. Smith*, 959 F.2d 936, 941-942 (Fed. Cir. 1992).

D. Claims 57-63 have been rejected based on facts within the personal knowledge of the Examiner.

1. The Examiner's grounds for rejecting claims 57-63 are based on assertions that are unsupported by any evidence supplied by the Examiner.

Claims 57-63 have been rejected on the basis of facts within the personal knowledge of the Examiner. In rejecting claims 57-58, 61, and 64-65, based on Jewell in view of Choquette, the Examiner has asserted that replacing “the implanted proton layer #48 of Jewell with the oxidized AlGaAs layer of Choquette” would result “in increased light generation efficiency” (see Office Action, p. 3). However, the Examiner has provided no evidence supporting the above assertion. Because the above unsupported assertion is used as a basis for combining Choquette with Jewell, claims 57-58, 61, and 64-65 have been rejected on the basis of facts within the personal knowledge of the Examiner. Furthermore, the rejection of claims 59-60 and 62-63 is also based on the combination of Choquette with Jewell. Therefore, claims 59-60 and 62-63 have also been rejected on the basis of facts within the personal knowledge of the Examiner.

In addition, in rejecting claims 59-60 and 62-63 based on the combination on Choquette and Jewell in view of Evans, the Examiner has asserted that combining “[hypothetical] light emitting device of Jewell and Choquette with the trench method, and location, of Evans [will provide] fabrication flexibility, oxidation of selected layers for current/index guiding, light confinement, and the realization of a passivated crystal surface which increases device reliability (see Office Action, pp. 4-5). However, the Examiner has provided no evidence supporting the above assertions with respect to any device described in Jewell or Choquette, much less the *hypothetical* “light emitting device of Jewell and Choquette”. Because the Office Action uses this unsupported assertion as part of the basis for combining Evans with the improper combination of Choquette and Jewell, the rejection of Jewell in view of Choquette is based on facts within the personal knowledge of the Examiner.

2. Applicant requests that the Examiner either: (a) provide an Affidavit under 37 C.F.R. § 1.104(d)(2), or (b) withdraw the rejections of claims 57-63.

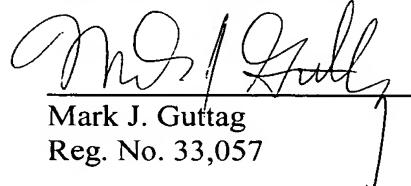
For at least the above reasons, not only have claims 57-63 have been rejected on the basis of facts within the personal knowledge of the Examiners. Accordingly, under 37 C.F.R. § 1.104(d)(2), the Applicant hereby requests that the Examiner either: (a) provide affidavit(s) or declaration(s) that contain these facts supporting each of the Examiner’s

unsupported assertions used as a basis for the rejections of claims 57-63 or, (b) withdraw the rejections of claims 57-63.

If the Examiner has any questions or concerns regarding the present response, the Examiner is invited to contact Mark J. Guttag at 703-591-2664, Ext. 2006.

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance, and favorable action is respectfully solicited.

Respectfully submitted,



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